

Table B-2. Survey of Industrial Research and Development--relative standard error for survey estimates, by industry and size of company: 2001

Industry and size of company	NAICS codes	Number of R&D-performing companies ¹	Domestic net sales of R&D performers	Domestic employment of R&D performers	Number of FTE scientists and engineers	Total R&D	Company and other funds for R&D	Company-financed R&D performed outside of U.S.	Company-financed R&D contracted to outside organizations	Federal funds for R&D	Total funds for basic research	Total funds for applied research	Total funds for development
			[Percent]										
Distribution by industry:													
All industries	21-23, 31-33, 42, 44-81	3,389	1.8	2.5	3.0	2.8	2.8	3.7	1.4	2.7	3.5	2.9	2.5
Manufacturing	31-33	1,844	1.8	2.5	2.7	2.4	2.5	2.6	0.9	1.2	2.9	2.4	2.7
Food	311	98	1.9	2.3	2.9	2.0	2.0	0.9	0.1	1.3	1.9	1.6	1.6
Beverage and tobacco products	312	10	0.2	0.3	0.1	0.1	0.1	0.5	0.0	0.0	(D)	0.0	(D)
Textiles, apparel, and leather	313-16	69	2.1	2.1	4.6	(D)	3.1	0.0	0.5	(D)	2.7	2.3	(D)
Wood products	321	21	1.4	1.7	5.2 (S)	5.6	5.6	(D)	(D)	0.3	0.3	1.9	0.9
Paper, printing and support activities	322, 323	34	1.6	3.0	3.4	(D)	1.6	(D)	(D)	(D)	3.9	0.2	(D)
Petroleum and coal products	324	10	0.2	0.7	0.6 (S)	(D)	0.3	(D)	0.0	(D)	1.3	0.7	(D)
Chemicals	325	212	1.8	2.2	3.2	2.3	2.3	1.9	0.1	2.1	(D)	(D)	2.6
Basic chemicals	3251	77	2.0	2.3	4.3	3.2	3.1	5.7	(D)	4.4	(D)	(D)	(D)
Resin, synthetic rubber, fibers, and filament	3252	15	2.0	1.4	1.0	(D)	1.7	(D)	(D)	(D)	0.4	(D)	(D)
Pharmaceuticals and medicines	3254	42	1.3	2.0	2.9	2.1	2.1	1.8	0.0	0.0	0.0	2.6	2.4
Other chemicals	325 minus (3251-52, 3254)	78	2.0	2.6	3.9 (S)	(D)	2.7	(D)	0.5	(D)	(D)	(D)	(D)
Plastics and rubber products	326	150	2.3	2.5	2.7	(D)	2.0	0.5	0.4	(D)	0.9	(D)	1.9
Nonmetallic mineral products	327	62	2.1	2.9	3.6	4.1	4.0	0.4	0.0	9.9	4.6	5.0	3.1
Primary metals	331	61	1.8	2.4	2.9	2.4	2.4	2.3	0.7	0.0	3.6	(D)	(D)
Fabricated metal products	332	159	2.2	2.5	3.9	2.4	2.5	1.6	0.0	0.5	4.1	3.1	3.3
Machinery	333	212	2.4	2.8	2.4	2.2	2.1	0.5	0.2	6.2	4.0	(D)	(D)
Computer and electronic products	334	365	2.4	2.8	2.2 (S)	2.7	2.8	5.7	1.9	1.4	(D)	2.9	(D)
Computers and peripheral equipment	3341	49	1.2	1.5	2.0	(D)	1.4	5.3 (S)	0.0	(D)	0.0	(D)	(D)
Communications equipment	3342	88	2.4	2.8	2.1 (S)	3.3	3.4	3.0	3.2	0.0	(D)	(D)	4.2
Semiconductor and other electronic components	3344	90	2.1	2.9	1.9	2.1	2.1	5.2	1.6	1.1	1.5	3.1	2.2
Navigational, measuring, electromedical, and control instruments	3345	112	2.8	2.7	2.6 (S)	2.2	2.6	6.5	0.7	1.4	(D)	3.2	(D)
Other computer and electronic products	334 minus (3341-42, 3344-45)	26	4.7	4.4	4.0	(D)	5.6	0.7	0.0	(D)	0.1	0.0	(D)
Electrical equipment, appliances, and components	335	77	2.1 (S)	3.4	5.0	5.1	5.3	1.1 (S)	0.1 (S)	(D)	2.4	(D)	(D)
Transportation equipment	336	96	1.1	1.8	1.8	1.1	1.2	0.2	0.0	0.0	(D)	1.1	(D)
Motor vehicles, trailers, and parts	3361-63	56	1.2	2.1	1.9	(D)	1.3	(D)	0.0	(D)	(D)	1.2	(D)
Aerospace products and parts	3364	20	0.7	1.0	1.6	0.3	0.4	0.7	(D)	0.0	(D)	0.4	(D)
Other transportation equipment	336 minus (3361-64)	20	1.3	1.6	2.3 (S)	(D)	1.6 (S)	(D)	(D)	(D)	0.3	2.4	(D)

See explanatory information and SOURCE at end of table.

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Industry and size of company	NAICS codes	Number of R&D-performing companies ¹	Domestic net sales of R&D performers	Domestic employment of R&D performers	Number of FTE scientists and engineers	Total R&D	Company and other funds for R&D	Company-financed R&D performed outside of U.S.	Company-financed R&D contracted to outside organizations	Federal funds for R&D	Total funds for basic research	Total funds for applied research	Total funds for development
			[Percent]										
Distribution by industry:													
Furniture and related products	337	51	2.0	2.5	3.3	2.1	2.1	(D)	0.0	0.0	2.5	0.4	2.4
Miscellaneous manufacturing	339	157	2.3	3.0	3.3	1.9	1.9	3.0	0.4	0.7	2.2	(D)	(D)
Medical equipment and supplies	3391	65	1.9	2.7	3.2	(D)	1.8	3.1	0.4	(D)	2.3	(D)	(D)
Other miscellaneous manufacturing	339 minus (3391)	92	3.0	3.4	3.7	(D)	2.4	1.8	0.1	(D)	1.1	(D)	(D)
Other manufacturing	31-33 minus (311-16, 321-27, 331-37, 339)	--	--	--	--	--	--	--	--	--	--	--	--
Nonmanufacturing	21-23, 42, 44-81	1,545	1.9	2.4	3.4	3.4	3.3	4.5	1.9	4.4	4.1	3.5	2.2
Mining, extraction, and support activities	21	17	0.3	0.8	0.7	(D)	0.5	0.0	0.3	(D)	0.2	(D)	(D)
Utilities	22	33	0.4	1.0	1.9	0.8	0.6	0.3	0.0	1.5	0.0	1.6	(D)
Construction	23	29	1.8	2.9	4.8	3.6	3.6	(D)	(D)	7.0	7.0	3.5	1.4
Trade	42, 44, 45	171	2.6	2.6	2.7	2.0	1.8	3.0	0.7	13.6	(D)	1.8	(D)
Transportation and warehousing	48, 49	15	2.3	0.9	2.7	13.9	13.9	0.0	(D)	14.6	(D)	(D)	(D)
Information	51	246	1.7	2.4	2.4	(D)	1.9	2.3	2.9	(D)	(D)	(D)	2.1
Publishing	511	195	1.5	2.2	2.2	1.7	1.7	1.5	3.7	3.1	(D)	(D)	2.2
Newspaper, periodical, book, and database	5111	16	0.9	1.5	2.4	2.4	2.4	0.0	0.4	0.0	0.0	0.9	3.4
Software	5112	179	1.7	2.6	2.2	1.6	1.6	1.5	3.8	3.1	(D)	(D)	2.2
Broadcasting and telecommunications	513	16	1.8	(D)	(D)	(D)	3.0	(D)	0.0	(D)	(D)	0.8	(D)
Radio and television broadcasting	5131	2	(D)	(D)	(D)	(D)	(D)	0.0	0.0	0.0	0.0	0.0	(D)
Telecommunications	5133	13	1.2	1.5	3.0	(D)	2.1	(D)	0.0	(D)	(D)	0.8	(D)
Other broadcasting and telecommunications	513 minus (5131, 5133)	1	(D)	(D)	(D)	(D)	(D)	0.0	0.0	0.0	0.0	0.0	(D)
Other information	51 minus (511, 513)	35	1.7	(D)	(D)	(D)	2.1	(D)	0.0	(D)	(D)	0.0	(D)
Finance, insurance, and real estate	52, 53	48	0.6	1.1	2.2	(D)	2.0	1.6	0.0	(D)	(D)	0.2	2.1
Professional, scientific, and technical services	54	876	2.4	2.8	3.7	3.0	2.8	6.1	3.0	3.8	3.3	3.9	2.9
Architectural, engineering, and related services	5413	137	2.1	2.4	2.8	3.0	3.4	4.4	3.0	1.9	(D)	4.0	(D)
Computer systems design and related services	5415	301	2.2	3.2	3.3	2.9	2.9	1.1	1.2	3.4	(D)	2.5 (S)	(D)
Scientific R&D services	5417	392	2.9	2.8	3.4	2.3	2.1	6.8	3.7	2.6	2.8	2.4	2.6
Other professional, scientific, and technical services	54 minus (5413, 5415, 5417)	46	2.4	2.6	8.8	8.9	6.7	0.0	1.5	14.5	6.6	14.9	3.9

See explanatory information and SOURCE at end of table.

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			[Percent]										
Distribution by industry:													
Management of companies and enterprises	55	14	4.9	6.8	8.1	5.6	5.6	(D)	0.0	0.0	(D)	5.4	(D)
Health care services	621-23	36	2.8	3.5	9.4	7.5	7.6	(D)	0.0	5.2	(D)	6.1	(D)
Other nonmanufacturing	56, 61, 624, 71, 72, 81	60	3.3	3.1	5.8	5.0	5.0	7.0	1.1	5.5	6.9	6.8	1.8
Distribution by size of company: [Number of employees]													
Total		3,389	1.8	2.5	3.0	2.8	2.8	3.7	1.4	2.7	3.5	2.9	2.5
5 to 24		184	10.1	11.3	11.4	12.4	12.3	14.8	15.1	12.9	12.0	11.1	9.9
25 to 49		188	7.0	7.7	6.9	6.1	6.2	5.7	4.5	2.9	6.0	(D)	(D)
50 to 99		285	6.8	6.8	5.7	6.4	6.6	6.0	4.1	3.5	5.9	5.5	7.0
100 to 249		575	5.1	5.6	5.0	4.6	4.7	4.8	1.4	2.7	3.7	3.5	3.9
250 to 499		433	3.7	4.1	2.5	2.2	2.3	1.7	0.6	0.4	2.9	2.4	2.1
500 to 999		459	3.8	4.3	2.5	2.2	2.2	2.2	3.2	0.8	(D)	3.2	(D)
1,000 to 4,999		790	1.2	1.7	0.8	0.6	0.6	0.2	0.2	0.0	(D)	0.3	(D)
5,000 to 9,999		210	0.3	1.5	0.1 (S)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1
10,000 to 24,999		150	0.1	0.3	0.0	0.0	0.0	0.1	0.0	0.0	(D)	(D)	0.0
25,000 or more		115	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

¹ The counts of R&D-performing companies in this table are equal to the sum of the counts of companies with reported or imputed R&D expenditures of "greater than or equal to \$5 million" plus companies with reported or imputed R&D expenditures of "less than \$5 million" in Table B-1. The relative standard error (RSE) estimates are based on reported and imputed data.

KEY: (D) = RSE is not calculated for a cell from which data have been withheld to avoid disclosing operations of individual companies.
 (S) = RSE shown is calculated for a cell with imputation of more than 50 percent.
 (-) = Indicates relative standard error not calculated for data not collected.

NOTE: The percentage (or relative) standard errors in this table may be converted to standard errors of estimate by multiplying the percentages shown by the associated estimates. For example, the relative standard error of estimate for company-funded R&D performance by the wood products industry (NAICS 321) is shown as 5.6 percent, and the associated company-funded R&D estimate for this industry is shown as \$181 million in Table A-7. The standard error of estimate is 0.056 times \$181 million or \$10.1 million.

An RSE of 0.0 either relates to an estimate of zero or indicates that the RSE itself has been rounded to zero.

Starting in 1999, the frame from which the statistical samples were selected was divided into two partitions based on total company employment. In the manufacturing sector, companies with employment of 50 or more were included in the large company partition. In the nonmanufacturing sector, companies with employment of 15 or more were included in the large company partition. Companies in the respective sectors with employment below these values, but with at least 5 employees, were included in the small company partition. The purpose of partitioning the sample this way was to reduce the variability in industry estimates largely attributed to the random year-to-year selection of small companies by industry and the high sampling weights that sometimes were assigned to them. Because of this, in prior reports detailed industry statistics were published only from the large company partition; detailed industry statistics from the small company partition were not. Statistics from the small company partition were included in the manufacturing, nonmanufacturing, and all industries totals, but were aggregated into "small manufacturing" and "small nonmanufacturing" classifications instead of being included in their respective industry classifications. For this report, this practice was evaluated and discontinued because it was determined that the data for small companies are more useful if they are included in their respective industries even given the sampling concerns described above.

Consequently, the "small manufacturing" and "small nonmanufacturing" stublines are no longer present. Statistics for the firms in the small company classifications are not shown separately in this table, but are included in the manufacturing, nonmanufacturing, and all industries totals. For more information, see technical notes in Survey of Industrial Research and Development Methodology: 2001 at <http://www.nsf.gov/sbe/srs/sird/start.htm>.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Industrial Research and Development: 2001